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	1	50
Zm-POX01	(1)	-----
Zm-POX04	(1)	-----QLSPTFYASSCPNLSIVRAAMTQAVASEQRM
Zm-POX05	(1)	-----TVTVNEPIANGLSWSFYDVSCPSVEGIVRWHVAEALRRDIGT
Zm-POX06	(1)	ASSAAHGYGYGGDAAAEALRVGFYKDCPDAAEAVVRRIVAKAVREDPTA
Zm-POX07	(1)	-----GLLESNPGLAYNFYKNSCPSVDSIVRSVTWAQVAANPAL
Zm-POX08	(1)	-----SPPGKLEVGIFYEHSCPAEDIVRNAVRRGIAREPGV
Zm-POX10	(1)	-----AVRELKVGYYAEICPEAEDIVRETMARARAREARS
Zm-POX16	(1)	-----QLSSTFYDTSCPSAMSTISSGVNSAVAQQARV
Zm-POX17	(1)	-----QLKEGFYDYSCPAEKIVKDYVKAHTPHAPDV
Zm-POX18	(1)	-----AGAAGLDMNFYGSTCPRVEAIVKEEMVATLKAAPT
Zm-POX20	(1)	-----QLTADYDCTCPDAYNIVKQVLEIAHKSVDRI
Zm-POX21	(1)	---RPVLTPLGTSRPAAGDLSVYFHADSCPQLETIVRSSVDAALQQNVRL
Zm-POX24	(1)	-----QLSPTFYDSSCPNALSTIKSAVNAAVQKENRM
Zm-POX26	(1)	-----QLRVGFYDSSCPAAEIIIVQQEVSRAVAANPGL
Zm-POX28	(1)	-----QLRQNYGSSCPSAEISTVRSVTSORLQQSFAM
Zm-POX31	(1)	---AHGYGAYGYGDAAAEALRVGFYKDCPDAAEAVVRRIVAKAVQEDPTA
Zm-POX34	(1)	-----QLKEGFYDYSCPAEKIVKDYVKAHTPHAPDV
Zm-POX37	(1)	-----GLTAQLRQDYAAVCPDLESIVRAAVSKKVAQPV
Consensus	(1)	QL FY SCP AESIVR V AV P V
	51	100
Zm-POX01	(1)	-----
Zm-POX04	(33)	GASLLRLFFHDCFVQGCDSITLLDAGG-----EKTAGPNLNSVIRGFV
Zm-POX05	(43)	AAGLIRIFFHDCFPQGCDAVLLSGSN-----SEQIEVPNOTLRPEALKI
Zm-POX06	(51)	NAPLLRLHFHDCFVRGCDGSVLVNSTRGNT--AEKDAKPN-HT-LDAFDV
Zm-POX07	(40)	PARLLRLHFHDCFVRGCDASITLLDTAQ-----SEKTAAPN-LS-VGGYEV
Zm-POX08	(37)	GAGLIRMHFHDCFVRGCDGSITLNTSTPDNK--AEKDSVANNPS-MRGFDV
Zm-POX10	(36)	VASVMRLQFHDCFVNGCDGSVLMDATPTMPG--EKDALSNINS-LRSFEV
Zm-POX16	(33)	GASLLRLHFHDCFVQGCDAITLLNDTS-----GEQTQPPNLTNLNPRAFDV
Zm-POX17	(33)	ASTLLRTHFHDCFVRGCDASVLLNATGGSE--AEKDAAPN-LT-LRGFGF
Zm-POX18	(37)	AGPLLRLHFHDCFVRGCDASVLLDSTPTST--AEKDATPN-LT-LRGFGS
Zm-POX20	(33)	YASLTCLHFHDCFVQGCDSVLLDVPGVANSTEKLAPANNNNS-ARGFPV
Zm-POX21	(48)	TAGLLRLLFHDCFPQGCDAITLLDNG-----ERGLPPNVGLQQAQVQL
Zm-POX24	(33)	GASLLRLHFHDCFVQGCDAVLLADNAATGFTGEQGAAPNAGS-LRGFDV
Zm-POX26	(33)	AAGLLRLHFHDCFVGGCDASVLLDSTKGNT--AEKDAGPN-LS-LRGFEV
Zm-POX28	(33)	CPGTLRLFFHDCFVRGCDASVLMAP---NGDDESHSGADATLSPDAVDA
Zm-POX31	(47)	NAPLLRLHFHDCFVRGCDGSVLVNSTRGNT--AEKDAKPN-HT-LDAFDV
Zm-POX34	(33)	ASTLLRTHFHDCFVRGCDASVLLNATGGSE--AEKDAAPN-LT-LRGFGF
Zm-POX37	(37)	VGATIRLFFHDCFVEGCDASVLLVSTG--NNTAEKDHPSNLSLAGDGFD
Consensus	(51)	AA LLRLHFHDCFV GCDASVLL AT AEKDA PN S LRGFDV

FIG 1A

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101
Zm-POX01 (1) -----MSCCMQGG-----GPA
Zm-POX04 (76) IDTIKRNVEAA--CPGVVSCADILALAARDGTNLLG-----GPT
Zm-POX05 (88) IDDIRAAVHAV--CGPTVSCADITTLATRDVAVASG-----GPF
Zm-POX06 (97) IDDIKEALEKR--CPGTVSCADILATAARDVSLATKVVTKGGWSRDGNL
Zm-POX07 (83) IDAIKAQLERA--CPGVVSCADIVALAARDVSYQFK-----ASL
Zm-POX08 (84) VDDAKAVLEAH--CPRTVSCADIVAFAAARDSAYLAG-----GLD
Zm-POX10 (83) VDEIKDALEER--CPGVVSCADIVIMAARDVVLTG-----GPN
Zm-POX16 (78) VNSIKAQVEAA--CPGVVSCADILAVAARDGVVALG-----GPS
Zm-POX17 (79) IDRIKALLEKE--CPGVVSCADIVALAARDSVGVIIG-----GPF
Zm-POX18 (83) VQRVKDRLEEA--CPGNVSCADVLALMARDAVVLAN-----GPS
Zm-POX20 (82) VDKVKALEDA--CPGVVSCADILALAAEISVELSG-----GPK
Zm-POX21 (91) VEDIRGKVHAA--CGPTVSCADITVLATRDVSLSG-----GPS
Zm-POX24 (82) IANIKAQVEAV--CKQTVSCADILAVAARDVVALG-----GPS
Zm-POX26 (79) VDRIKARVEQA--CFGVVSCADILAFAAARDSVALAG-----GNA
Zm-POX28 (80) INKAKAAVEALPGCAGKVCADILAMAARDVVSLLG-----GPS
Zm-POX31 (93) IDDIKEALEKR--CPGTVSCADILATAARDVSLATKVVTKGGWSRDGNL
Zm-POX34 (79) IDRIKALLEKE--CPGVVSCADIVALAARDSVGVIIG-----GPF
Zm-POX37 (85) VIQAKAAVDVAVPCANQVSCADILALATRDVIELAG-----GPS
Consensus (101) ID IKA LE CPG VSCADILALAARDV LAG GP

151
Zm-POX01 (12) YKLPPLGRRDGLAPASNAAVLAALPPPTS KMPTLLSFLAKI-NLDVTDLVA
Zm-POX04 (113) WSVPLGRRDSTTASASLANS-NPPPPTASLGTLISLFGRO-GLSPRDMTA
Zm-POX05 (125) FEVPLGRRDGLAPASSDLVG-TLPAPFFDVPTLIESFKNR-SLDKADLVA
Zm-POX06 (145) YQVETGRRDGRVSRAKEAVK-NLPDSMDGTRKLTIRRFASK-NLSVKDLAV
Zm-POX07 (121) WQVETGRRDGTVSLASNTG--ALPSPFAGFAGLLQSFSDR-GLNLTDLVA
Zm-POX08 (121) YKVPSPGRRDGRVSKEDVLDNNVPAPTDEVDLIESFKRK-GLNADDMMVT
Zm-POX10 (120) WEVRLG-REDSMTASQEDADNIMPSPRANASALIRLFAGL-NLSVTDLVA
Zm-POX16 (115) WTVLLGRRDS-TGSFSPQTS-DLPPPTSSLQALLAAYSKK-NLDATDMVA
Zm-POX17 (116) WSVPTGRRDGTVSIKQEALD-QTPAPTMNFTQLLQSFONK-SLNLADLVW
Zm-POX18 (120) WPVALGRRYGRVSLANETN--QLPPPTANFTRLVSMFAAK-GLSVRDLVV
Zm-POX20 (119) WAVLLG-RLDSKKADFKSAENLP-SPFDNLTVLEQKFAAV-GLHTVDLVA
Zm-POX21 (128) FTVPLGRDLSAAPASSNDVF-TLPPPTATVDELLTAFGSKNLSDPADLVA
Zm-POX24 (119) WTVPLGRRDSTTASLSLANS-DLPPPFNLGQLITAFGNK-GFTATEMAT
Zm-POX26 (116) YQVPAGRRDGSVSRASDTNG-NLPPPTANVAQLTQIFGTK-GLTQKEMVI
Zm-POX28 (119) YGVELGRLDGKTFNRAIVKH-VLPGPGFNLQDQNALFAQN-GLTQTDMTA
Zm-POX31 (141) YQVETGRRDGRVSRAKEAVK-NLPDSMDGTRKLTIRRFASK-NLSVKDLAV
Zm-POX34 (116) WSVPTGRRDGTVSIKQEALD-QTPAPTMNFTQLLQSFONK-SLNLADLVW
Zm-POX37 (124) YAVELGRLDGLVSMSTNVVG-KLPPPSFNLQDQTSIFALN-NLSQADMTA
Consensus (151) W VPLGRRDG VS A E LP PT NL LI FA K LS DLVA

200
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FIG 1B

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201
Zm-POX01 (61) LSGGHTVGVIAHCGSFDNRLEP-----TQDPTLNKFFAGOLYRTCPTN
Zm-POX04 (161) LSGAHTIGQARCTTFRGRIYG-----DTDINASFAALRQOTCPRS
Zm-POX05 (173) LSGAHTVGRGHCVSFSDRLPP-----NADDGTMDPAFRQRLTAKCASD
Zm-POX06 (193) LSGAHAIGKSHCPSIAKRLRNFTAHR---DSDPTLDGAYAAELRRQCRSR
Zm-POX07 (168) LSGAHTIGVASCSSVIPRLYQGNASS---VDPLLDSAYARTLMSSCPNP
Zm-POX08 (170) LSGAHTIGRSHCSSFTIRLYNFSGQLG--RTDPSLDPAYAEHLKMRCPWP
Zm-POX10 (168) LSGSHSIGEARCFSIVFRLYNQSGSG--RPDPHMDTAYRRSLDALCPKG
Zm-POX16 (162) LSGAHTIGQAQCSSFNGHTYN-----DTNINAAFATSLKANCPMS
Zm-POX17 (164) LSGAHTIGISQNSSFERLYNFTGRGGPDDADPSLDPLYAAKRLKCKTL
Zm-POX18 (167) LSGGHTLGTAHCNLFSDRLYNFTGANSLADVDPALDAAYLARLSRCRSL
Zm-POX20 (166) LSGAHTFGRVQCQFVTGRLYNFSGTN--RPDPTLNSGYRAFLAQRCPQN
Zm-POX21 (177) LSGAHTVGKARCSSFGDVAGP-----ATDDVTR-----CVTATCSAP
Zm-POX24 (167) LSGAHTIGQAQCKNFRDHTYN-----DTNINOGFASSLKANCPRP
Zm-POX26 (164) LSGAHTIGSSHCSSFSGRLSGSATTAG--GQDPTMDPAYVAQLARQCPQG
Zm-POX28 (167) LSGAHTIGVTHCDKFVRRITYTFKQ--RLAWNPPMNLDELRLSLRRVCPLS
Zm-POX31 (189) LSGAHAIGKSHCPSIAKRLRNFTAHR---DSDPTLDGAYAAELRRQCRRR
Zm-POX34 (164) LSGAHTIGISQNSSFERLYNFTGRGGPDDADPSLDPLYAAKRLKCKTL
Zm-POX37 (172) LSAHTVGVFAHCSTFSDRITQ-----PQSVDPTMNATYAEDLQAACPAG
Consensus (201) LSGAHTIG AHC SFS RLYN G DPTLD AYAA LR CP

251
Zm-POX01 (103) AT----VNTTANDVRTPNAFDNKYYVDLLNREG---LFTSDQDLLTN--
Zm-POX04 (201) GGDG---NLAPIDVQTPVREDTAYETNLLSRRG---LFHSDQELFNG--
Zm-POX05 (216) PSGN---VVTQVLDVRTPNAFDNKYYFDLIAKQG---LFKSDQGLTNHP-
Zm-POX06 (240) RD---NTTELEMVPGSSTAFGTAYYGLVAERRA---LFHSDEALLRN--
Zm-POX07 (214) SP---ASATVALDGGTPFRFDSSYYSRVQOKQG---TLASDAALAQN--
Zm-POX08 (218) SSNDQMDPTVVPLDPVTPATFDNQYYKNVLAHKV---LFISDNTLLEN--
Zm-POX10 (215) GD---EEVTGGLD-ATPRVFDNQYFEDLVALRG---FLNSDQTLFSD--
Zm-POX16 (202) GGS----SLAPLDTMTPTVFDNDYYKNLLSOKG---LLHSDQELFFNN--
Zm-POX17 (214) TD---NTTIVEMDPGSFRTFDLSYYRGVLKRRG---LFQSDAALITD--
Zm-POX18 (217) AD---NTTLNEMDPGSFLSFDSSYYSLVARRRG---LFHSDAALLTD--
Zm-POX20 (213) GS---PSALNDLDPTTPNLFDNHYTNLEVNRG---FLGSDQELKSAPQ
Zm-POX21 (214) GSG---DTLRDLDFLTPAVFDNLYFVELTLRKNKGVMLPSDQGLVSDP-
Zm-POX24 (207) TGSGD--GNLAPLDTTTPYSFDNAYYSNLLSOKG---LLHSDQELFNG--
Zm-POX26 (212) G-----DPLVPMDYVSPNAFDEGHYKGVMSNRG---LLSSDQALLSD--
Zm-POX28 (214) YSP---TAFAMLDVTTPRVFDNAYENNLRYNKG---LLASDQVLFTDR-
Zm-POX31 (236) RD---NTTELEMVPGSSTAFGTAYYGLVAERRA---LFHSDEALLRN--
Zm-POX34 (214) TD---NTTIVEMDPGSFRTFDLSYYRGVLKRRG---LFQSDAALITD--
Zm-POX37 (215) VDP---NIALQLDPVTPQAFDNQYFANLVDGRG---LFASDQVLFSDA-
Consensus (251) L LD TP FDNAYY LL RRG LF SDQALLS
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FIG 1C

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301
Zm-POX01 (143) --ATTTRPTVTRFAVD--QDAFFDQFVYSYVKMGQVNVLTGSQ-GQVRANC
Zm-POX04 (242) --GSQDALVROYSA--SASLFNADFVAAMIRMGNVGVLTGTA-GQIRRN
Zm-POX05 (259) ---DTKRAATRFALN--QAAFFDQFARSMVKMSQMDILTG-SAGEIRRN
Zm-POX06 (281) --GETRALVYRYRDAPSEAPFLADFGASMLNMGRVGVLTGAQ-GEIRKRC
Zm-POX07 (255) --AAAAQMVADLTN---PIKFYAAFSMSMKKMGRVGVLTGAN-GQIRKQC
Zm-POX08 (263) --PWTAGMVHFNAA--VEKAWQVKFAKAMVKMGKVQVLTGDE-GEIREKC
Zm-POX10 (255) -NTRTRRMVERLSK--DQDAFFRAFIEGMLKMGELQ---NPRKGEIRRN
Zm-POX16 (242) --GSTDSTVSNEAS--SFGR LHQR LHGHGEDGEPRPAHRDQ-WADQ AHL
Zm-POX17 (255) --AASKADILSVIN-APPEVFFQVFAGSMVKMGATEVKTGSE-GEIRKHC
Zm-POX18 (258) --PATRAYVQRQATGLFTAEEFRDFADSMVKMSTIDVLTGQQQGEIRKKC
Zm-POX20 (256) AOGVTAPVVDQFAT--SQAAFFSSFAQSMINMGNTQPLTDPKAGEVRCDC
Zm-POX21 (259) ---RTSWLVQGFADN--HWWFFDQFR TSMIKMSQLRG PQG-NVGEIRRN
Zm-POX24 (250) --GSTDNTVRNEAS--NSAAFSSAF AAMVKMG NLSPLTGSQ-GQIRLTC
Zm-POX26 (251) --KNTAVQVVTYAN--DPATFQADFAAMVKMGSGVGVLTGTS-GKVRANC
Zm-POX28 (256) ---RSRPTVNLFAAN--ATAFY EAFVAAMAKLGRIGLKTG-ADGEIRRV
Zm-POX31 (277) --GETRALVYRYRDAPSEAAFLAEFGASMLNMGRVGVLTGAQ-GEIRKRC
Zm-POX34 (255) --AASKADILSVIN-APPEVFFQVFAGSMVKMGATEVKTGSE-GEIRKHC
Zm-POX37 (257) ---RSQPTVVAWAQN--ATDFEQAFVDATITRLGRVGVKTDPSLGDVRRDC
Consensus (301) G TR LV FA FF FAASMVKMG V VLTG GEIRK C
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351
Zm-POX01 (188) SARNGAAAGSDLPWSSSVVIETVADAAGSLVL-----
Zm-POX04 (287) RVVNS-----
Zm-POX05 (303) SVRNTALGDVSSSAQLETTAGDEGLAADA-----
Zm-POX06 (328) AFDVN-----
Zm-POX07 (299) RQVNTS-----
Zm-POX08 (308) FAVNPHY-----
Zm-POX10 (299) RVANNSPWQPR TGMASGQSTSELR-----
Zm-POX16 (287) LEAQVLVLI IKDGRPIDDPAQSYRTCMIRIHLETTIPMQTEIYTYEYV
Zm-POX17 (301) ALVNKH-----
Zm-POX18 (306) NLVN-----
Zm-POX20 (304) RVANDD-----
Zm-POX21 (303) FRPNTNGIAASA-----
Zm-POX24 (295) STVN-----
Zm-POX26 (296) RVA-----
Zm-POX28 (300) TAVN-----
Zm-POX31 (324) AFDVN-----
Zm-POX34 (301) ALVNKH-----
Zm-POX37 (302) AFDN-----
Consensus (351) VN
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FIG 1D